

NORTH AMERICAN DELTOCEPHALINE LEAFHOPPERS OF THE
GENUS *PLANICEPHALUS* WITH NEW GENERIC SEGREGATES
FROM *DELTOCEPHALUS*
(HOMOPTERA: CICADELLIDAE)

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ABSTRACT—The North American species of *Planicephalus* Linnavuori are redescribed, revised, and keyed. Three species are included: *P. flavicosta* (Stål), *P. flavocostatus* (Van Duzee), and *P. luteoapicalis* (Beamer). *Deltocephalus lare-danus* Oman is assigned to *Mendozellus* Linnavuori, a genus previously known only from Neotropical America. *Deltocephalus marinus* Metcalf and Osborn is assigned to a new genus, **Tideltellus**. *Deltocephalus obesus* Osborn and Ball is assigned to a new genus, **Deltazotus**. *Deltocephalus comesus* DeLong and Slesman is reduced to a synonym of *D. obesus*. All critical diagnostic features are illustrated. New distributional records and host plant data are included.

The genus *Deltocephalus* Burmeister in North America, as defined in the past, was a catch-all for numerous species of leafhoppers which had little in common. Oman (1949) redefined the genus and described many generic segregates from *Deltocephalus*. More recent studies of the Neotropical and Eurasian faunas now show that further restriction of the genus is necessary for reasons of zoogeography and refinement of definitions. Two genera, *Planicephalus* Linnavuori and *Mendozellus* Linnavuori, formerly known only from the Neotropics, and two new genera described here are North American segregates from *Deltocephalus*. Elsewhere, other species of *Deltocephalus* listed in Oman (1949: 173–174) will be discussed and revised.

Planicephalus Linnavuori, n. status

Deltocephalus subgenus *Planicephalus* Linnavuori, 1954:143. Type-species: *Jassus* (*Deltocephalus*) *flavicosta* Stål.

Small to medium sized deltocephaline leafhoppers (2.4–3.8 mm). Head slightly wider than pronotum. Anterior margin of head rounded to face. Clypeal suture obscure. Pronotum of moderate length. Macropterous with forewings extending much beyond apex of abdomen or submacropterous and exposing tip of abdomen. Male genitalia: valve large; plates moderately long, stout, subtriangular, with uniseriate marginal spinelike setae laterally; pygofer strongly setose, entirely membranous dorsally except for narrow basal strip, and apex modified; aedeagus moderately stout and strongly upturned distally, with or without keel or tooth on ventral margin and appressed finlike processes on shaft; gonopore subapical on ventral margin of shaft; aedeagus fused with linear connective. Color stramineous to black with costal margins of forewings yellow.

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In Oman's key to the genera of North American *Deltocephalini* (1949:111-119), *Planicephalus* will trace to couplet 129, *Deltocephalus* Burmeister. It can be separated from that genus on the basis of the largely membraneous dorsum of the male pygofer, the modified distal portion of the male pygofer, and the subapical gonopore on the ventral margin of the aedeagal shaft *versus* largely sclerotized dorsum of male pygofer, the simple distal portion of the male pygofer, and the terminal gonopore at the apex of the aedeagal shaft.

Planicephalus Linnavuori (1954:143) was originally described as a subgenus of *Deltocephalus*. In my opinion, it is sufficiently distinct from that genus to deserve full generic status.

KEY TO THE NORTH AMERICAN SPECIES OF *Planicephalus*

1. Crown dark fuscus to black with anterior margin broadly yellow (fig. 1);
aedeagus without a keel or tooth on ventral margin (fig. 6)
..... **luteoapicalis** (Beamer)
- Crown not as above; aedeagus with a keel or tooth on ventral margin 2
2. Aedeagus with a large keel on ventral margin (fig. 13)
..... **flavocostatus** (Van Duzee)
- Aedeagus with a variously shaped tooth on ventral margin (figs. 15-16)
..... **flavicosta** (Stål)

Planicephalus luteoapicalis (Beamer), n. comb.

(Figs. 1-7)

Deltocephalus luteoapicalis Beamer, 1938:81.

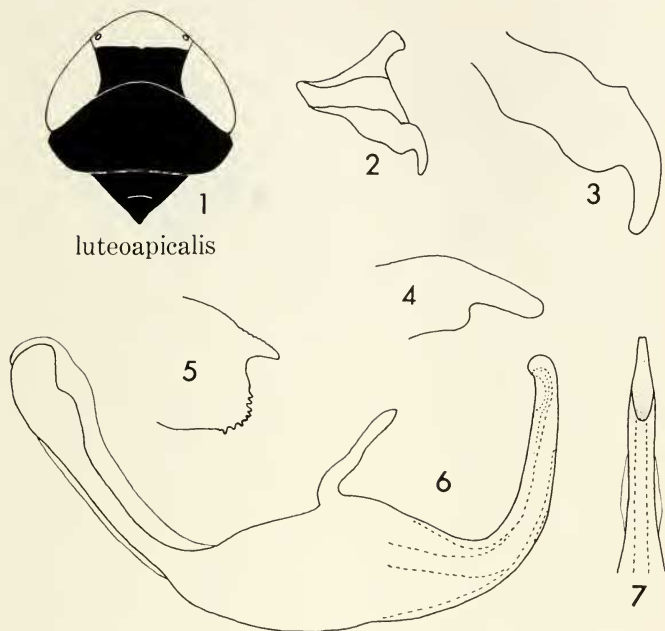
Length. Male 2.4-2.6 mm. Female 2.5-3.0 mm.

Structure. Head in dorsal view (fig. 1) bluntly angular at apex, ocelli moderately large and fairly close to eyes; males macropterous; females submacropterous, exposing part of genital segment dorsally, venation obscure, each appendix reduced, apical cells shortened, inner anteapical cells usually closed basally, central anteapical cells divided or not, outer anteapical cells normal or slightly reduced.

Coloration. Venter of abdomen fuscus to dark fuscus, at times with variable paler areas; venter of thorax yellow with or without touches of fuscus; face yellow with clypeus, except for upper edge, and upper edges of genae dark fuscus to black; crown, pronotum, and scutellum (fig. 1) dark fuscus to black, apical portion of crown broadly yellow; forewings dark fuscus to black, costal margin yellow posteriorly to a point near base of outer anteapical cell, veinlets from base and apex of outer anteapical cell broadly yellow or whitish, tip of forewing narrowly yellowish or whitish.

Male genitalia. Apex of pygofer with a projection dorsally and blunt teeth ventrally (fig. 5); aedeagus in lateral view (fig. 6) without a keel or tooth on ventral margin, somewhat constricted on dorsal margin near apex, prolonged basally; aedeagal shaft in posterior view (fig. 7) slender with gonopore subapical; style in dorsal view (fig. 2) with mesal lobe moderately long and slender, lateral lobe broad and blunt; distal portion of style in lateral view (fig. 4) as shown.

Female genitalia. Pregenital sternum narrowed posteriorly, exposing under-



luteoapicalis

Figs. 1-7, *Planicephalus luteoapicalis* (Beamer): 1, head and thoracic dorsum; 2, style, dorsal view; 3, styler lobes, dorsal view; 4, styler lobes, lateral view; 5, apical portion of pygofer, lateral view; 6, aedeagus and connective, lateral view; 7, aedeagal shaft, posterior view.

lying sclerites laterally, posterior margin broadly rounded laterally, concave on middle half with a variably distinct broad median tooth (Beamer 1938:fig. 7a).

Records. The type locality is San Antonio, Texas. My confirmed records: TEXAS, Elmendorf, George West, Peeler, San Antonio.

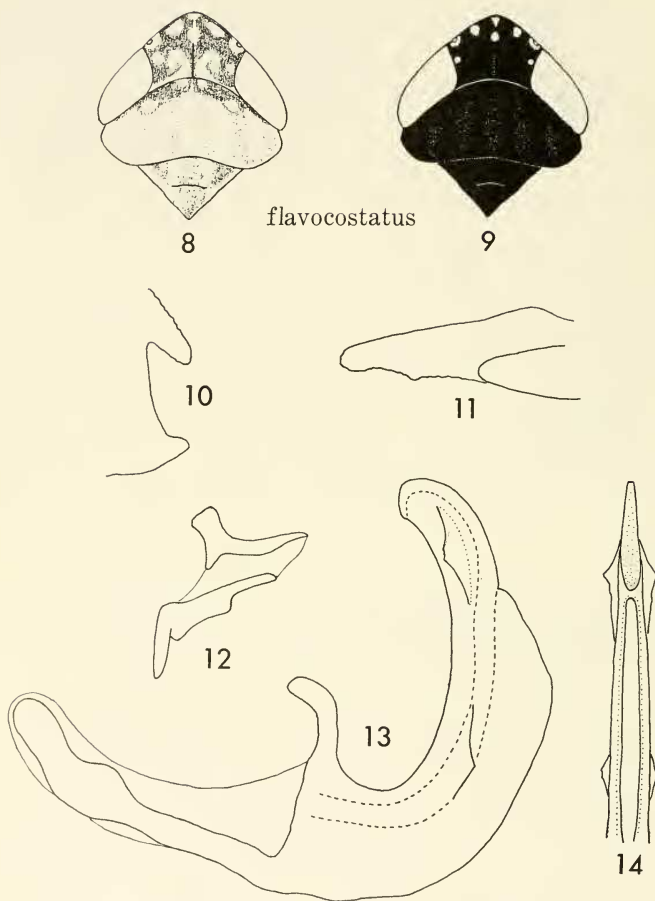
Notes. This species is easily recognized on the basis of the essentially dark dorsum with the strongly contrasting yellow coronal tip and yellow costal margins of the forewings. The male genitalia are unique. No host data are known.

***Planicephalus flavocostatus* (Van Duzee), n. comb.**

(Figs. 8-14)

Deltoccephalus flavocostatus Van Duzee, 1892:116.

Length. Male 2.8-3.3 mm. Female 3.2-3.6 mm.



Figs. 8-14, *Planicephalus flavocostatus* (Van Duzee): 8, head and thoracic dorsum, light form; 9, same, dark form; 10, apex of pygofer, dorsolateral view; 11, stylar lobes, dorsolateral view; 12, style, dorsal view; 13, aedeagus and connective, lateral view; 14, aedeagal shaft, posterior view.

Structure. Head in dorsal view (figs. 8-9) bluntly angular apically, ocelli moderately large and close to eyes; in macropterous forms, each appendix well developed, apical cells large, with inner anteapical cell closed basally, central anteapical cell divided (rarely undivided), outer anteapical cell normal or slightly reduced (rarely open distally); submacropterous forms unknown.

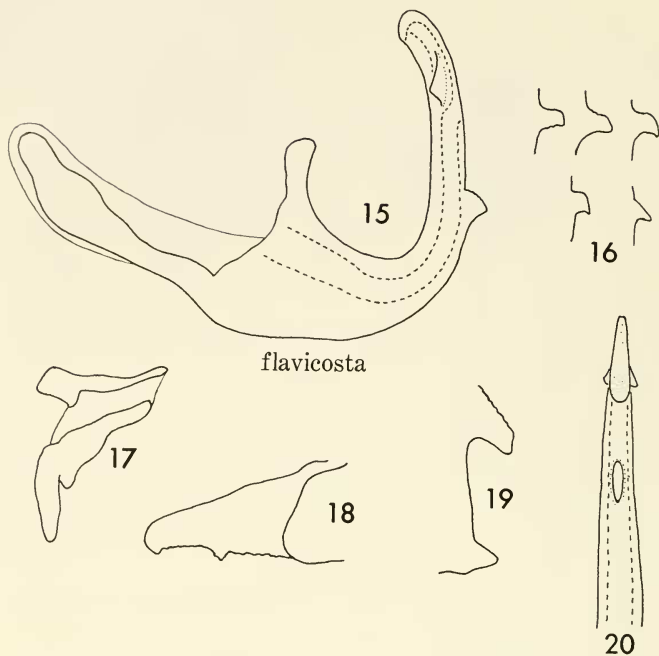
Coloration. Highly variable; venter of abdomen and thorax pale brown to yellowish and moderately to heavily infuscated with only edges of segments paler to nearly all black; legs with ground color of venter and unmarked or with infuscations on apex of hind tibiae and tarsi; face with ground color of venter and infuscated on clypeal arcs and variably on lower face grading to entirely dark fuscus or black with few pale markings on upper clypeus and edges of genae; crown, pronotum, and scutellum (figs. 8-9) with ground color of venter; dark coronal markings distinct only on distal half, pronotum faintly longitudinally striped, scutellum darkened at basal angles, grading to entirely dark fuscus or black with only scattered light areas on crown; forewings brownish subhyaline with veins irregularly whitish, and apical cells darkened, grading to entirely dark fuscus with veins irregularly paler only in distal half; in all color forms, costal margin distinctly yellow posteriorly to a point near base of outer anteapical cell, veinlets from base and apex of outer anteapical cell to costal margin whitish.

Male genitalia. Apex of pygofer in dorsolateral view (fig. 10) with a thickened, black or fuscus, short, blunt, irregular projection dorsally; aedeagus in lateral view (fig. 13) with a large ventral keel and appressed finlike processes near base and apex; aedeagal shaft in posterior view (fig. 14) slender with gonopore sub-apical and keel narrow; style in dorsal view (fig. 12) with mesal lobe moderately long and slender, lateral lobe short; distal portion of style in dorsolateral view (fig. 11) irregular on ventral margin of mesal lobe.

Female genitalia. Pregenital sternum somewhat narrowed posteriorly exposing underlying sclerites laterally, posterior margin more or less sinuate, sometimes with four feebly developed lobes (DeLong 1926:pl. 18; fig. 6a).

Records. The type locality is Mississippi [State College?]. My confirmed records: ALABAMA, Auburn; ARKANSAS, Lee Co.; DELAWARE, Milford; FLORIDA, Hilliard, Jacksonville, La Belle, Miami, Palm Beach, Polk City; GEORGIA, Athens; ILLINOIS, Urbana; INDIANA, Lafayette; IOWA, Montrose; KANSAS, Onaga, Topeka, Wichita; LOUISIANA, Opelousas; MARYLAND, Calloway, Forest Glen, Glen Echo, Plummers Island; MISSISSIPPI, Sardis, State College; MISSOURI, Buckner, Hollister; NEW JERSEY, Hoboken, Newark; NEW YORK, Babylon, Poughkeepsie; NORTH CAROLINA, Balsam, Raleigh, Southern Pines; OHIO, Salineville; OKLAHOMA, Watts; PENNSYLVANIA, State College; SOUTH CAROLINA, Clemson, Columbia; TENNESSEE, Hamilton Co.; VIRGINIA, Arlington, Bluemont, Nelson Co.; WEST VIRGINIA, Fairmont, Mannington.

Notes. Except for DeLong and Slesman (1929:98), *flavocostatus* has been treated as a synonym of *flavicosta* by previous workers. The two species are easily separated by the features noted in the key. *P. flavocostatus* is widely distributed in the eastern and middle western



Figs. 15–20, *Planicephalus flavicosta* (Stål): 15, aedeagus and connective, lateral view; 16, variations in ventral aedeagal tooth; 17, style, dorsal view; 18, stylar lobes, lateral view; 19, apex of pygofer, dorsolateral view; 20, aedeagal shaft, posterior view.

states; it is sympatric with *flavicosta* in Louisiana and Florida. The only plant associations I have seen with specimens are alfalfa, Bermuda grass, and crab grass.

***Planicephalus flavicosta* (Stål), n. comb.**

(Figs. 15–20)

Jassus (*Deltocephalus*) *flavicosta* Stål, 1862:53.

Deltocephalus (*Planicephalus*) *flavicosta* (Stål): Linnavuori, 1954:143–144.

Length. Male 3.3–3.8 mm. Female 3.4–3.8 mm.

Structure. Not different from that of *flavocostatus*.

Coloration. Within variations described for *flavocostatus*. Some forms entirely stramineous with only costal areas of forewings yellow.

Male genitalia. Apex of pygofer in dorsolateral view (fig. 19) similar to that of *flavocostatus*; aedeagus in lateral view (fig. 15) with a variably developed tooth (fig. 16) at center of posterior margin and appressed finlike process near apex; aedeagal shaft in posterior view (fig. 20) slender with gonopore subapical; style in dorsal view (fig. 17) with mesal lobe moderately long and stout, lateral lobe short; distal portion of style in lateral view (fig. 18) irregular on ventral margin of mesal lobe.

Female genitalia. Pregenital sternum not different from that of *flavocostatus*.

Records. The type locality is Rio de Janeiro, Brazil. My confirmed records: FLORIDA, Alachua Co., Archbold Biological Station, Cedar Keys, Dunedin, Eifers, Hilliard, La Belle, New Port Ritchey, Orlando, Plant City, Polk City, Royal Palm Park, Venice, Zolfo Springs; LOUISIANA, Opelousas; TEXAS, Brownsville, Goliad, Kerrville, Victoria.

Notes. This species is easily separated from its close relative, *flavocostatus*, by the features noted in the key. *P. flavicosta* is one of the most common leafhoppers in the West Indies and Central America; it has been reported from as far south as northern Argentina. On the basis of our present information, *flavicosta* is probably limited to our states bordering the Gulf of Mexico.

***Mendozellus laredanus* (Oman), n. comb.**

(Figs. 21-25)

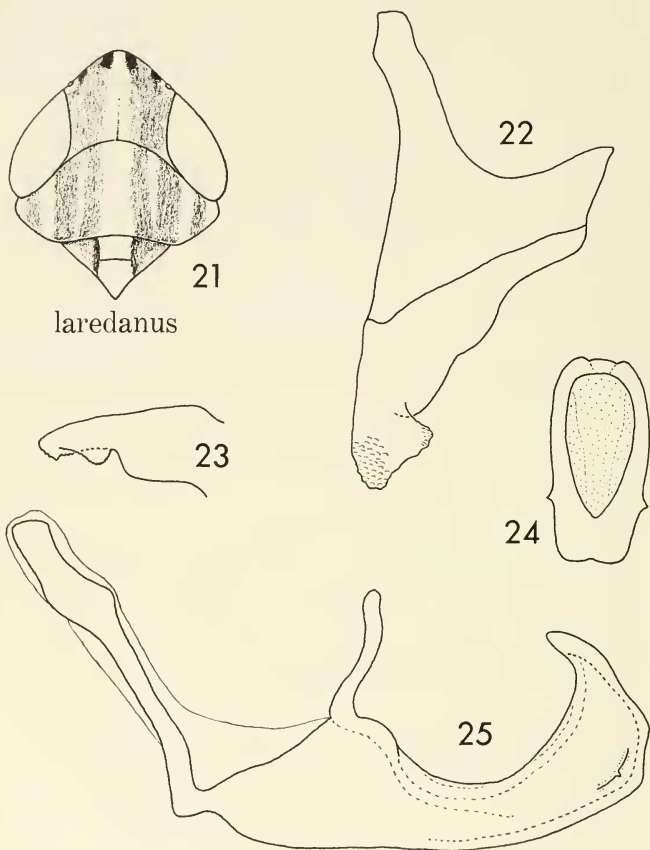
Deltocephalus laredanus Oman, 1934:78.

Length. Male 3.0-3.4 mm. Female 3.2-3.4 mm.

Structure. Crown produced beyond eyes and bluntly angular at apex (fig. 21); ocelli of moderate size and close to eyes; crown in lateral view flattened between eyes and convex anterior to eyes; forewings long and extending well beyond abdomen with inner anteapical cell closed basally, central anteapical cell divided, and outer anteapical cell normal.

Coloration. Venter of abdomen, thorax, legs, and face pale yellowish brown; lateral edges of abdominal segments and clypeal arcs at times vaguely darker, usually with vague dark spot under each ocellus; crown, pronotum, and scutellum (fig. 21) bright yellowish brown to golden brown and marked with four small dark spots between ocelli on anterior margin, moderately wide ivory stripe centrally from coronal apex to scutellar apex, often with a pair of narrower longitudinal ivory stripes flanking each side of central stripe on pronotum; forewings stramineous, subhyaline, veins whitish to ivory and often faintly margined with fuscus, commissural margins of clavus frequently distinctly ivory and appearing as narrow extension of central coronalthoracic stripe.

Male genitalia. Male plates bluntly triangular and shorter than pygofer. Aedeagus in lateral view (fig. 25) stout and broadly upturned on distal third, with tooth near ventral margin distally and extreme apex narrowed; distal portion of aedeagus in posterior view (fig. 24) with gonopore subapical and exceedingly large; style in dorsal view (fig. 22) with mesal lobe expanded laterally, rugulose laterally and distally, mesal lobe short and blunt; distal portion of style in lateral view (fig. 23) with mesal lobe expanded anterior to small tooth on ventral margin.



Figs. 21-25, *Mendozellus laredanus* (Oman): 21, head and thoracic dorsum; 22, style, dorsal view; 23, styler lobes, lateral view; 24, apical portion of aedeagus, posterior view; 25, aedeagus and connective, lateral view.

Female genitalia. Pregenital sternum narrowed posteriorly, exposing underlying sclerites laterally, posterior margin broadly and shallowly excavated with a variably developed median tooth.

Records. The type locality is Laredo, Texas. My confirmed records: TEXAS, Alpine, Austin, George West, Laredo, Mission, San Antonio, Sarita.

Notes. The markings and male genitalia distinguish this species. The lateral pair of anterior coronal markings are often obsolete. In heavily pigmented specimens, particularly on the scutellum, the median ivory stripe is margined with fuscus. The lateral ivory pronotal stripes may be obsolete.

Mendozellus Linnavuori (1959:117) was described as a subgenus of *Amplicephalus* DeLong. In my opinion, it is sufficiently distinct from that genus to deserve full generic status. *M. laredanus* is closest to *M. isis* (Linnavuori), an Argentine species. Oman, in the original description, correctly stated that *laredanus* was more closely related to several South American species than to the North American species of *Deltocephalus*.

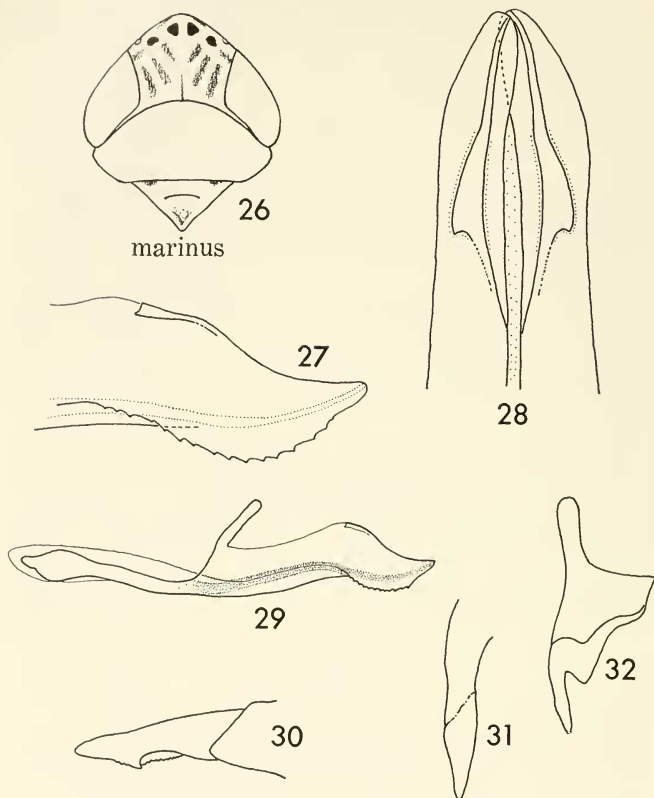
In Oman's key to the genera of North American Deltocephalini (1949: 111-119), *Mendozellus* will trace to couplet 129, *Deltocephalus* Burmeister. It can be separated from that genus on the basis of the broad and stout mesal lobe of the style, toothlike projections near ventral margin of aedeagus distally, and in *laredanus*, the large subapical gonopore on the ventral margin of the aedeagus *versus* long slender mesal lobe of the style, no toothlike projections as above, and a small gonopore at apex of aedeagus.

***Tideltellus*, n. gen.**

Type-species: *Deltocephalus marinus* Metcalf and Osborn

Small deltocephaline leafhoppers (3 mm or less). Head wider than pronotum. Anterior margin of head broadly rounded to face. Clypeal suture obscure or absent. Pronotum short. Forewings: macropterous and extending beyond apex of abdomen or submacropterous and exposing tip of abdomen. Male genitalia: valve large; plates exceptionally large and exceeding apex of pygofer; plates elongate, subtriangular, and acute with marginal spine-like setae uniseriate; pygofer strongly setose; aedeagus transverse and cleft in dorsal or ventral view nearly to base; aedeagus fused with linear connective. Color stramineous or pale brownish with limited fuscus to black markings.

In Oman's key to the genera of North American Deltocephalini (1949: 111-119), *Tideltellus* will trace to couplet 132, *Destria* Oman. It can be separated from *Destria* on the basis of the small size, 3 mm or less, the aedeagus cleft nearly to its base in dorsal or ventral view *versus* larger size, 4 mm or more, the aedeagus with at most a deep apical notch in dorsal or ventral view.



Figs. 26–32, *Tidelteillus marinus* (Metcalf and Osborn): 26, head and thoracic dorsum; 27, apical portion of aedeagus, lateral view; 28, distal portion of aedeagus, dorsal view; 29, aedeagus and connective, lateral view; 30, stylar lobes, lateral view; 31, mesal lobe of style, dorsal view; 32, style, dorsal view.

***Tidelteillus marinus* (Metcalf and Osborn), n. comb.**
(Figs. 26–32)

Deltocephalus marinus Metcalf and Osborn, 1920:110.

Length. Male 2.0–2.5 mm. Female 2.3–3.0 mm.

Structure. Head in dorsal view (fig. 26) bluntly angular at apex, eyes, proportionally large, somewhat bulging, nearly touching posterior margin of pronotum;

forewings long and extending well beyond abdomen or shortened and exposing most of genital segment; in forms with shortened forewings, known only from females, each appendix reduced and apical cells shortened; in both wing forms, inner anteapical cell closed basally, central anteapical cell undivided, outer anteapical cell normal or slightly reduced.

Coloration. Variable; venter of abdomen, thorax, and legs sordid stramineous to pale brownish variously touched with fuscus or not; face with ground color of venter and unmarked or with clypeal arcs and rarely irregular areas on lower face lightly embrowned; crown, pronotum, and scutellum with ground color of venter and in well marked specimens (fig. 26) with four small black spots on anterior margin between ocelli, four to six oblique dashes on coronal disc, and six longitudinal brownish stripes on pronotum, frequently only observable markings are the dark spots at anterior coronal margins; forewings sordid stramineous, subhyaline, with veins concolorous; edges of cells lightly embrowned or not, usually traces of embrowning most distinct on inner and central anteapical cells.

Male genitalia. Aedeagus in lateral view (fig. 29) transverse and broadly decurved on distal third; distal portion of aedeagal shaft in lateral view (fig. 27) serrated ventrally and concave dorsally; distal portion of aedeagus in dorsal view (fig. 28) with a finlike structure on each half of bifurcated shaft; style in dorsal view (fig. 32) with lateral lobe broad and moderately produced and mesal lobe (fig. 31) long, slender, and somewhat irregular on inner margin; distal portion of style in lateral view (fig. 30) with preapical tooth on irregular ventral margin.

Female genitalia. Pregenital sternum narrowed posteriorly, exposing underlying sclerites laterally, posterior margin broadly concave, at times with traces of median tooth (DeLong 1926:pl. 18, fig. 3a).

Type. Male, Wrightsville Beach, North Carolina, 27 July 1919, H. Osborn and Z. P. Metcalf, in North Carolina State University Collection, Raleigh.

Records. The type locality is Wrightsville Beach, North Carolina, where specimens were collected on a small grass below level of high tide on tidal flats. My confirmed records: FLORIDA, Cedar Keys, Clearwater, Daytona, Islamorada, Jacksonville, Key Largo, Key West, New Smyrna Beach, Tampa, Venice; NORTH CAROLINA, Wrightsville Beach.

Notes. Its small size and male genitalia distinguish this species. The type series was taken on "a very fine-leaved grass" on the seashore in North Carolina. DeLong (1926:89) reported *marinus* on prairie grass at La Belle, Florida, several miles from the tidal conditions. None of the Florida collections I have studied have host data. The ecology of this species needs attention.

***Deltazotus*, n. gen.**

Type-species: *Deltocephalus obesus* Osborn and Ball

Small to medium sized deltocephaline leafhoppers (2.4–3.8 mm). Head as wide as or wider than pronotum. Anterior margin of head broadly rounded to face.

Clypeal suture absent. Pronotum of moderate length. Forewings macropterous and extending much beyond apex of abdomen or brachypterous with apices rounded and exposing up to three and a partial fourth abdominal segment dorsally. Male genitalia: valve large; plates short and subtruncated apically, with few uniseriate submarginal spine-like setae and hairlike filaments laterally, and long hairlike filaments distally on subtruncated portion; pygofer strongly setose; aedeagus elongated, bowed, with short pair of ventral processes, and gonopore moderately large, subapical on dorsum of shaft; aedeagus fused with linear connective. Color light brown or yellowish brown with fuscus or black markings.

In Oman's key to the genera of North American *Deltocephalini* (1949:111-119), *Deltazotus* will trace to couplet 129, *Deltocephalus* Burmeister. It can be separated from *Deltocephalus* on the basis of the subtruncated male plates and the presence of ventral aedeagal processes *versus* acute male plates without ventral aedeagal processes.

***Deltazotus obesus* (Osborn and Ball), n. comb.**

(Figs. 33-39)

Deltocephalus obesus Osborn and Ball, 1898:81.

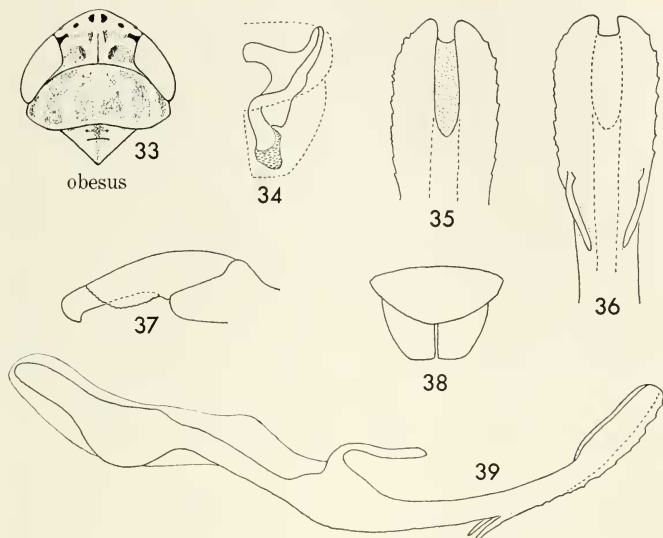
Deltocephalus comesus DeLong and Sleesman, 1929:104. **New synonymy.**

Length. Male 2.4-3.6 mm. Female 2.8-3.8 mm.

Structure. Head in dorsal view (fig. 33) bluntly angular at apex, ocelli of moderate size and removed from eyes; in long winged forms, each appendix well developed, apical cells large, with inner anteapical cell closed basally, central anteapical cell divided, and outer anteapical cell narrow; in brachypterous forms, each appendix absent, apical cells obsolete or nearly absent, all anteapical cells shortened with outer anteapical cell often open distally.

Coloration. Variable; venter of abdomen ranging from light brown and variously infuscated to nearly all fuscus or black; venter of thorax fuscus to black and paler only at segmental margins; legs pale brown and lightly or heavily infuscated; face pale brown and marked with fuscus to black on clypeal arcs, all sutures, central portion of clypellus, upper edges of genae, and spots under each ocellus; crown, pronotum, and scutellum (fig. 33) light brown to yellowish brown; anterior coronal margin with six small fuscus to black spots, spots vary in size and shape, those next to eyes usually elongated, coronal disc with blotches of various shades of brown, blotches often obsolete; pronotum with six longitudinal brownish stripes, stripes often obsolete; scutellum darkened at anterior angles and at middle or not at all; forewings whitish subhyaline with veins concolorous, cells not or but slightly infuscated marginally, infuscation, when present, most distinct in clavus, discal cell, anteapical and apical cells.

Male genitalia. Valve large with plates short (fig. 38). Aedeagus in lateral view (fig. 39) elongated, somewhat enlarged apically with ventral margin serrated, processes small and lanceolate near middle of shaft; distal portion of aedeagus in ventral view (fig. 36) notched apically, in dorsal view (fig. 35) with gonopore elongated and U-shaped; style in dorsal view (fig. 34) with rugulose distal cap on mesal lobe and lateral lobe short and blunt; distal portion of style in lateral view (fig. 37) with mesal lobe long, subapical tooth on its irregular ventral margin.



Figs. 33-39, *Deltazotus obesus* (Osborn and Ball): 33, head and thoracic dorsum; 34, style, dorsal view; 35, apical portion of aedeagus, dorsal view; 36, distal half of aedeagus, ventral view; 37, styler lobes, lateral view; 38, valve and plates, ventral view; 39, aedeagus and connective, lateral view.

Female genitalia. Pregenital sternum not exposing sclerites laterally, posterior margin with a broad and deep U-shaped excavation, with or without a median tooth (DeLong 1926:pl. 13, fig. 7a).

Type. Male, Arizona [2089], in Iowa State University Collection, Ames.

Records. The type locality is Arizona. My confirmed records: ARIZONA, Granite Dell, Huachuca Mts., Patagonia, Phoenix, Santa Rita Mts., Tubac, Tucson, Williams, Yuma; CALIFORNIA, San Bernardino, San Diego; LOUISIANA, Calcasieu Parish, Creole, Shreveport; NEW MEXICO, Chaves Co., Eddy Co., Mesilla Park; OKLAHOMA, Hinton, Willis; TEXAS, Brownsville, Cameron Co., El Paso Co., Harris Co., Jackson Co., Kendall Co., Kerrville, Orange Co., Spur, Victoria; UTAH, Hurricane, Leeds, St. George.

Notes. The male genitalia distinguish this species. Other than grasses, the host plants are not known. The species has a wide distribution west of the Mississippi River.

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NABIS PROPINQUUS REUTER RANGES SOUTHWARD INTO MARYLAND

(HEMIPTERA: NABIDAE)

Specimens of *Nabis propinquus* Reuter collected by John L. Hellman in a swamp on Deal Island, Somerset County, Maryland, on June 29, 1970, represent a marked southward extension of range along the Atlantic seaboard for that species. Blatchley (1926, Heteroptera or True Bugs of Eastern North America, p. 598) reported it as far south as "New England" and Harris (1928, Ent. Amer. 9:52) reported it ranging as far south as the State of New York. The national collection contains 2 collections from New Jersey (White's Bay, July 20, 1914, and Snake Hill, without date) suggesting that the species occurs regularly in marsh habitats as far south as southern Maryland.

The Hellman series contained 3 brachypterous males, one brachypterous female, and one macropterous female with membrane reaching onto last pregenital abdominal segment (the second macropterous individual in the national collection); all the New Jersey specimens are brachypterous. These data add support to Harris' (supra, p. 53) statement, "Macropterous examples are extremely rare, the males perhaps never occurring in this form."—RICHARD C. FROESCHNER, *Department of Entomology, Smithsonian Institution, Washington, D. C. 20560.*